

Article 9 | Landscaping and Buffering

3 Sec. 9.1 General

4 9.1.1 Purpose

The standards of this section provide for the preservation of existing vegetation and for the installation and maintenance of new vegetation and other landscape architectural features. The purpose of these standards is to:

The standards of this Section provide for the preservation of existing vegetation and for the installation and maintenance of new vegetation and other landscape architectural features. The purpose of these standards is to improve property and community appearance, allow for the ecological benefits provided by plant materials, prevent the overcrowding of land and enhance the privacy and welfare of citizens by separating land uses.

- A. <u>Improve property and community appearance without compromising community safety, including minimization of the offsite visual impact of extensive land disturbance;</u>
- B. Allow for the ecological benefits provided by plant materials, including protection of land from unnecessary erosion and watercourse sedimentation, reduction of stormwater runoff, improvement of air quality, and provision of wildlife habitat;
- C. Reduce the urban heat island effect;
- **D.** Enhance the beauty of the built environment; and
 - E. Enhance the privacy and welfare of citizens by separating incompatible land uses.

22 9.1.2 Applicability

- A. The landscaping and buffering standards of this section shall apply to all proposed development for which a site plan or preliminary plat is required.
- All requirements shall run with the land use and shall apply against any owner or subsequent owner.
 - B. Land used toward achieving the requirements of the section need not hold the same zoning designation as the use to which the landscaping and buffer applies, unless the property is zoned with a development plan showing all requirements met onsite. If the landscaping or buffer is on land without the same designation as the use, but the landscaping shall either be on the same lot or on contiguous property under the same permanent possession or control as the lot on which the use is located.

Sec. 9.2 Landscape Design

2 9.2.1 Design Guidelines

- The following guidelines are intended to ensure that the safety of residents and visitors is not compromised through poor landscape design. These guidelines shall be balanced against other objectives of landscaping, such as sheltering, buffering and screening purposes in the review of landscape plans.
- 7 A. <u>Landscaping should contribute to the livability of the environment.</u>
- 8 B. A "water-wise" approach to landscape materials (including mulch), design and installations is encouraged. The amount of irrigation and maintenance required for landscaping should be minimized.
- 12 Landscaping should be selected, installed and maintained in compliance with Crime
 12 Prevention Through Environmental Design (CPTED) principles so that it allows
 13 unobstructed views of vulnerable doors and windows from the street and other
 14 properties and avoids blind spots and hiding spaces.
- D. <u>Landscaping in the Rural and Suburban Tiers should be clustered to provide a</u>
 natural feeling. <u>Landscaping in the Urban, Compact and Downtown Tiers may be</u>
 arrayed more formally.
- 18 E. <u>Landscape materials should be selected and arranged to add variety and visual</u> interest.
- F. Site landscaping and streetscapes should be compatible and complement one another.
- 22 G. <u>Site landscaping should not conflict with utility placement.</u>
- H. <u>Landscaping should be used to define property lines and private areas with planting areas, pavement treatments, or walls and fences.</u>
- 25 Landscaping, fences, walls and paving treatments should be designed to guide visitors to desired entrances and away from private areas.
- J. <u>Plant placement in buffers may include clustering; however, such clustering should</u> be reflected in plant placement that provides the maximum protection of neighboring properties.
- 30 K. Landscaping should be used to divide parking areas into smaller lots.

31 9.2.2 Basic Plant Types

There are four five basic plant types referred to in this section, and all shall require
the use of be locally-adapted plants. They include large canopy trees, small trees,
Alarge shrubs, evergreen trees, deciduous understory trees, evergreen understory
trees and shrubs, defined as follows:

A. Large Canopy Trees

Large deciduous shade trees with a mature height of 30 feet or greater and a mature
 spread of 30 feet or greater in the Suburban or Rural Tiers or, in the Urban, Compact
 and Downtown Tiers, a mature height of 20 feet or greater.

| | | | Sec. 9.2 Landscape Design | | | | | | | |
|----------------------------|-------|---------------------|--|--|--|--|--|--|--|--|
| 1 2 3 | В. | Tree | rgreen Trees es at least 20 feet tall at maturity that usually have green foliage throughout all ons of the year. | | | | | | | |
| 4 5 6 7 | C. | Sma feet | reciduous Small Understory Trees /Large Shrubs mall deciduous trees or large deciduous shrubs with a mature height of 10 to 30 ret, except under overhead utilities, where lower heights at maturity may be required. | | | | | | | |
| 8 9 10 | D. | Tree | rgreen <u>Understory</u> Trees es or large shrubs at least 10 feet tall at maturity that usually have green foliage ughout all seasons of the year in the Durham region . | | | | | | | |
| 11 12 13 14 | E. | Pros heig | Shrubs <u>(Deciduous and Evergreen)</u> Prostrate or upright woody plants, either evergreen or deciduous, with a mature neight usually less than 10 feet. <u>Evergreen shrubs usually have green foliage</u> hroughout all seasons of the year. | | | | | | | |
| 15 16 17 18 | 9.2.3 | <u>Unl</u> min | Plant Material Requirements Unless specified elsewhere in this Ordinance, plant material shall meet the following minimum requirements. When determining the quantity of plant material required, the quantity shall always be rounded up to the nearest whole number. | | | | | | | |
| 19 20 21 22 23 | A. | All j late Am | Plant Materials, General All plant material shall meet or exceed size and shape relationships specified in the latest edition of The American Standard for Nursery Stock published by the American Association of Nurserymen. All sizes specified refer to size at time of planting. | | | | | | | |
| 24 | В. | <u>Tre</u> | <u>es</u> | | | | | | | |
| 25 26 27 | | 1. | Canopy Trees a. Canopy trees shall have a minimum size of two-inch caliper at time of planting. | | | | | | | |
| 28 | | | b. Canopy trees shall be planted at least 18 feet apart. | | | | | | | |
| 29 | | 2. | Evergreen Trees | | | | | | | |
| 30 31 | | | Evergreen trees shall have a minimum height of eight feet at the time of planting. | | | | | | | |
| 32 | | 3. | <u>Deciduous Understory Trees</u> | | | | | | | |
| 33 34 35 | | | a. Deciduous understory trees with single stems shall have at a minimum size of one-inch caliper and a minimum height of eight feet at the time of planting. | | | | | | | |
| 36 37 | | | b. <u>Multi-stemmed deciduous understory trees shall have a minimum height of eight feet at the time of planting.</u> | | | | | | | |
| 38 | | | c. <u>Deciduous understory trees shall be planted at least 12 feet apart.</u> | | | | | | | |

40 41 Evergreen understory trees shall have a minimum height of six feet at the time of planting.

4. Evergreen Understory Trees

5. Mixing of Tree Species

When more than 20 trees are required to be planted on a site to meet these regulations, a mix of species shall be provided. The following table indicates the maximum percentage of trees of the same genus and species that may be planted.

| Total Trees Planted on Site | Minimum Number of Species Required | Maximum Percentage of Any Species |
|-----------------------------|------------------------------------|-----------------------------------|
| 20 trees or less | I | not applicable |
| 21 to 50 trees | 2 | 70% |
| 51 to 100 trees | 3 | 50% |
| 101 to 200 trees | 4 | 40% |
| 201 to 300 trees | 5 | 30% |
| 301 to 500 trees | 6 | 25% |
| Over 500 trees | 7 | 20% |

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C. Shrubs

1. Deciduous and Evergreen Shrubs

a. All shrubs shall be cold hardy and heat tolerant.

- **b.** <u>Upright shrubs shall be a minimum of 15 inches in height at the time of planting.</u>
- c. Shrubs shall not be planted closer than three feet on center. Shrubs shall not be planted closer than three feet to planted trees, nor within six feet of existing protected trees; however, no more than 25% of the root protection zone of an existing tree may be disturbed with new plantings.
- d. When planted as a hedge, the maximum spacing for 24-inch high deciduous shrubs shall be 36 inches on center. Spacing for other size shrubs shall be determined by the Planning Director or designee based on the proposed species.

2. Mixing of Shrub Species

When shrubs are required to be planted on a site to meet these regulations, a mix of species shall be provided. The following table indicates the maximum percentage of shrubs of the same genus and species that may be planted.

| Z | 4 |
|---|---|
| 2 | 5 |

| Total Shrubs Planted on Site | Minimum Number of Species Required | Maximum Percentage of Any Species |
|------------------------------|------------------------------------|-----------------------------------|
| 100 shrubs or less | 4 | 30% |
| 101 to 200 shrubs | 5 | 25% |
| 201 to 300 shrubs | 6 | 20% |
| 301 to 400 shrubs | 7 | 20% |
| 401 to 500 shrubs | 8 | 20% |
| 501 to 600 shrubs | 9 | 20% |
| Over 601 shrubs | 10 | 20% |

D. Plant Variations

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The Planning Director, or designee, shall have the authority to allow variations in the mix of plants required, up to a maximum of 20% of the total required plant type, in order to encourage creativity in landscape design, to more effectively create a buffer or screen, to handle unique site issues such as existing tree species or topography, or to allow for more efficient irrigation or water use practices.

E. <u>Preferred Species</u>

The Planning Director, or designee, shall maintain a list of plants by type and their preferred location or use on sites developed under this Article. The list shall include drought tolerant species.

F. **Prohibited Plants**

The Planning Director, or designee, shall maintain a list of plants that are not permitted for any use due to their invasive tendencies. Such species shall not be planted as landscaping for any purpose.

G. Plants Not Allowed for Credit

<u>The Planning Director, or designee, shall maintain a list of plants that have invasive tendencies, but are not so invasive that they should be prohibited. No credit towards required landscaping using these plants shall be permitted.</u>

19 9.2.4 Landscape Plans

<u>Landscaping plans shall be prepared by certified landscape architects or other professionals with a proficiency in preparing landscaping plans.</u>

22 9.2.5 Installation

A. Easements

- 1. No trees shall be planted in access or utility easements (except easements for overhead utilities), or in stormwater BMP facilities, except for bio-retention areas or constructed wetlands.
- **2.** Existing trees may remain in dry retention ponds provided that the natural grade is undisturbed to the tree line, they are a species adapted to seasonal flooding and the pond can be adequately maintained.
- **3.** Shrubs shall be installed at least five feet away from the flow line of a swale.
- **4.** Shrubs may be planted in a public utility easement provided they are planted only within the outer three feet of the easement and are approved by the utility provider.

B. Tree Grates

<u>Tree grates for required trees shall not be permitted in the Rural Tier. When used, such grates shall be sized and maintained to ensure continued health of any required tree and installed so as not to create any pedestrian hazard.</u>

C. Groundcovers and Mulch

1. Groundcovers may be planted around trees, provided they are located outside of the planting hole.

Sec. 9.2 Landscape Design

2. <u>Mulch shall be used in all areas where no other ground cover or grass is used to avoid bare spots and promote "water-wise" landscaping.</u>

D. Certification

<u>Landscape architects or designers may certify that landscape plantings have been installed in conformance with the approved landscaping plan including planting sizes, species, and installation techniques in lieu of inspection by the Planning Department</u>

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Sec. 9.3 Existing Vegetation Credits for Required Landscaping

9.3.1 Existing Vegetation

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A. Existing Healthy vegetation may shall be retained when possible and may be credited toward landscaping requirements. Sampling of the existing vegetation pursuant to Sec. 9.3.3 shall be required. although photographs of the buffer area may be used to supplement sampling. Vegetation to be saved shall meet all requirements of Sec. 8.3.3. be located and identified on site plans.

as measured at four and one half feet above grade. Trees so credited must be at least two inch caliper and be uniformly encircled by a root zone protection area shown on the grading, erosion control and landscape plans. The size, type and location of each tree shall be designated on the plan, with the root zone protection area shown graphically.

B. Protection of natural groups of trees is encouraged, with each tree within the grouping being credited as if standing alone. In order to receive credit, at least 80% of the root protection zone areas shall remain undisturbed, encompass all trees within the grouping. Large groupings of trees to be saved shall be identified and the tree save areas shall be credited towards landscaping if the tree save areas are sufficient. In addition, all small trees, /large shrubs evergreen trees and smaller shrubs shall also be identified, with size, species and quantities. The descriptions shall be shown clearly on the plans. Such Trees whose root protection zones areas fall outside the protected area but are within larger groups of trees, shall not count toward any landscaping requirements but shall be left in place unless they are diseased or otherwise hazardous to the integrity of the buffer or the development.

9.3.2 Existing Canopy Trees

- A. Healthy canopy trees may be retained and credited toward landscaping requirements if each tree proposed for credit has a caliper of at least two and one-half inches and all requirements of Sec. 8.3.3 are satisfied. Credit given for existing, healthy, protected trees shall be a number equal to the value of the dbh of each protected tree divided by two inches, but no fraction thereof.
- B. Credit shall be allocated on a one-for-one basis for healthy evergreen trees.
 deciduous understory trees, evergreen understory trees or shrubs. The size of
 material shall not be taken into account, except where such material is below the
 required minimum planting size, in which case no credit shall be granted.

9.3.3 Sampling

- A. All trees, shrubs and groundcover within a minimum 20 foot by 20 foot area for each unique stand of vegetation shall be inventoried and identified on the landscape plan.
 Photographs may be used to supplement the sample but shall not replace it. For purposes of determining preserved tree coverage, shrubs and groundcover need not be included in the sampling.
 - B. <u>The Planning Director, or designee, may require additional sample areas as needed to represent the existing vegetation.</u>

Removal of such diseased or hazardous materials otherwise shown to meet requirements of this section shall require approval by the Planning Director or designee.

1 Sec. 9.4 Project Boundary Buffers

- 2 The intent of buffer areas is to provide a space to separate differing uses, reduce the visual
- 3 impact of development and provide for the retention of existing plant materials.

4 9.4.1 Applicability

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- A. <u>Project boundary buffers shall be required in the Rural, Suburban, and Urban Tiers, considering the proposed use and zoning district and the adjoining uses and zoning districts.</u>
 - B. No <u>project boundary</u> buffers shall be required for property in the Downtown or the <u>Compact Neighborhood Tier</u>, unless the proposed project adjoins development in the <u>Suburban or Urban Tiers</u>, in which case, project boundary buffers shall be required on that side of the project. Design Overlay.

These standards apply to all nonresidential and multifamily uses located next to property zoned for residential use. When nonresidential and multifamily uses submit a site plan for locations next to property zoned for residential use, buffers shall be provided near the perimeter of the nonresidential or multifamily property. These buffer requirements shall apply when a right-of-

- way for a public street or railroad no more than 50 feet in width separates a nonresidential or
- 18 multifamily property from a residential property, except as indicated in Section 10.3.
- 19 The required buffer width is dependent on the intensity classification given in the proposed use 20 in the chart in Section 10.2.4.
- 21 If the adjacent property is zoned for residential use but is vacant at the time of the proposed
- 22 development, one-half of the required buffer width shall be provided.
- 23 If the proposed development is nonresidential and the adjacent property is zoned or used for
- 24 multifamily dwellings, the full buffer width shall be provided. However, if the adjacent property
- 25 is vacant, one-half of the required buffer width shall be provided.
- 26 If the proposed development is for multifamily dwellings adjacent to property zoned or used for
- 27 multifamily dwellings, one half of the buffer width shall be provided, whether the property is
- 28 occupied or not.

29 **9.4.2** Location

- A. Required <u>project boundary</u> buffers shall be provided along the perimeter of any lot or development <u>except adjoining street or railroad rights-of-way that are greater than 60 feet in width unless alternate locations are approved. Buffers shall be designated and dimensioned on all site plans.</u>
- 34 B. Project boundary buffers shall be designated and dimensioned on all site plans and preliminary plats.

9.4.3 Standards

A. Opacity

- 1. The buffer standards in the table below address the opacity of the buffer that is required on the property boundary between zoning districts, and in some instances within a zoning district.
- 41 **2.** An opacity of 0.1 screens 10%, and an opacity of 1.0 would fully screen the use from adjacent properties during summer months no more than five years after planting.

B. Project Boundary Buffer Table

| | | | ZONII | NG DIS | TRICT | OF AD | JACEN | T PRO | PERTY | |
|-------------------------------------|--|--------------------------------|---|--------------------------------|------------|--------|--------|--------------------|-------------------|--------|
| | | RR and PDR at Rural Density | RS-20, RS-10, RS-8 and PDR at Suburban Density | RU and PDR at Urban Density | RS-M, RU-M | RC | NO | OI, SRP, MU, UC | CG, CC, IL, IP | |
| RTY | RR and PDR at Rural Density | 0/0 | 0/.2 | .2/.6 | .2/.8 | .2/.8 | .2/.6 | .2/.6 | .2/.8 | .2/1.0 |
| ZONING DISTRICT OF SUBJECT PROPERTY | RS-20, RS-10, RS-8 and PDR at Suburban Density | .2/.2 | 0/0 | .2/.4 | .2/.6 | .2/.6 | .2/.6 | .2/.6 | .2/.8 | .2/1.0 |
| CT PI | RU and PDR at Urban Density | .4/.6 | .2/.4 | 0/0 | .2/.6 | .2/.6 | .2/.6 | .2/.6 | .2/.8 | .2/1.0 |
| SUBJE | RS-M, RU-M | .6/.8 | .4/.6 | .4/.6 | .2/.4 | .2/.4 | .2/.6 | .2/.6 | .2/.8 | .2/1.0 |
| - OF § | RC | .6/.8 | .4/.6 | .4/.6 | .2/.4 | 0/0 | 0/0 | .2/.6 | .2/.6 | .2/1.0 |
| IRICT | СИ | .4/.6 | .4/.6 | .4/.6 | .4/.6 | 0/0 | 0/0 | 0/0 | .2/.6 | .2/1.0 |
| DIST | OI, SRP, MU, UC | .4/.6 | .4/.6 | .4/.6 | .4/.6 | .4/.6 | 0/0 | 0/0 | .2/.6 | .2/1.0 |
| NING | CG, CC, IL, IP | .6/.8 | .6/.8 | .6/.8 | .6/.8 | .4/.6 | .4/.6 | .4/.6 | .2/.4 | .2/1.0 |
| οz | I | .8/1.0 | .8/1.0 | .8/1.0 | .8/1.0 | .8/1.0 | .8/1.0 | .8/1.0 | .8/1.0 | .2/.4 |

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COMMENTARY: The second number also represents the Total Buffer, which normally occurs across the property line, with unequal responsibility for buffering on both sides of the line based on intensity of the use or district.

COMMENTARY: .2/.4 requires a 20% opaque buffer for property adjacent to vacant land or a 40% opaque buffer when adjacent to existing development without a buffer. A zero means no project boundary buffer is required.

EXAMPLE: A new development in the CG District abutting a developed RS District without a buffer would be required to provide a buffer with a total opacity of .8 (80% opaque). If the adjacent RS property were vacant, the requirement would be reduced to .6 (60% opaque), and the developer of the RS property would provide the remaining .2 (20%) at the time of development of the residential property.

1. <u>Multiplex and apartment development proposed in any district to be adjacent to single-family districts or single-family developments on other properties shall provide buffers in accordance with the provisions for RS-M or RU-M districts.</u>

Sec. 9.4 Project Boundary Buffers

| 1 2 3 4 5 | | 2. Non-residential development proposed in a residential district to be adjacent to residential districts or residential developments (except for upper story residential) on other properties, that would not otherwise require a buffer, shall provide buffers in accordance with the provisions for the CN District in determining buffer requirements. | | | | | |
|----------------------------|-------|---|--|--|--|--|--|
| 6 7 8 9 10 | | 3. Additionally, Nonresidential or multifamily uses proposed next to property used for residential purposes, although nonresidentially zoned, shall provide one half of the required <u>opacity</u> buffer width along the perimeter of the property adjoining the property <u>used</u> zoned for residential <u>purposes although</u> <u>nonresidentially zoned.</u> <u>use</u> . | | | | | |
| 11 12 | | 4. Some uses may require additional buffering, as set forth in the specific use standards of Sec. 5.3. | | | | | |
| 13 | 9.4.4 | Natural Buffers | | | | | |
| 14 | A. | Natural Buffer Required | | | | | |
| 15 16 | | 1. Existing healthy, natural forest cover and other vegetation shall be used to meet buffer requirements in the Rural and Suburban Tiers as follows: | | | | | |
| 17 | | a. Where a buffer with an opacity of 0.8 or greater is required; and | | | | | |
| 18 | | b. Where the existing tree cover exceeds 15 feet in height; and | | | | | |
| 19 20 | | c. Where the existing tree canopy covers 75% or more of the required buffer area. | | | | | |
| 21 | | 2. The minimum width of a required natural buffer shall be 50 feet. | | | | | |
| 22 23 24 25 26 | B. | Natural Buffer as an Option In the Urban Tier and in projects in the Rural and Suburban Tiers that do not require use of a natural buffer, a natural buffer may be employed. A minimum natural buffer width of 25 feet or the width required to satisfy Sec. 9.4.5, whichever is greater, shall be required in these instances. | | | | | |
| 27 28 29 | C. | <u>Tree Protection in Natural Buffers</u> <u>In addition to the requirements of Sec. 8.3.3, trees within natural buffers shall be protected as follows:</u> | | | | | |
| 30 | | 1. 75% of the root protection zone shall be undisturbed; and | | | | | |
| 31 32 | | 2. For trees over 30 inches dbh, at least 90% of the root protection zone shall be undisturbed. | | | | | |
| 33 34 35 36 | D. | Additional Planting Natural buffers may require additional planting and buffer width in order to meet the required opacity, at the discretion of the Planning Director or designee. Sampling of existing vegetation within a natural buffer pursuant to Sec. 9.3.3 shall be required. | | | | | |

| 1 | 9.4.5 | Constructed Butter | | | | | |
|----|-------|--|--|--|--|--|--|
| 2 | A. | <u>Plant Units</u> | | | | | |
| 3 | | In order to ensure variety in buffer planting, this section establishes a standard | | | | | |
| 4 | | buffer planting element called a "plant unit." The plant unit serves as a measure of | | | | | |
| 5 | | plant material required per 100 linear feet of all buffer landscaping. The plant unit | | | | | |
| 6 | | provides a balance of vegetation, and the various plant units shall be considered | | | | | |
| 7 | | comparable, and therefore interchangeable, as set forth below. | | | | | |
| 8 | | 1. The following alternative plant units may be used to satisfy the project | | | | | |
| 9 | | boundary buffer requirements: | | | | | |
| | | • | | | | | |
| 10 | | a. <u>Alternative 1: Mixed Evergreen</u> | | | | | |
| 11 | | b. <u>Alternative 2: Deciduous</u> | | | | | |
| 12 | | c. <u>Alternative 3: Evergreen</u> | | | | | |
| 13 | | d. <u>Alternative 4: Overhead Utility</u> | | | | | |
| 14 | | 2. Alternative 2, Deciduous, shall not be permitted adjacent to residential districts | | | | | |
| 15 | | or uses unless walled modifications are employed. | | | | | |
| | | • • | | | | | |
| 16 | | 3. Alternative 4, Overhead Utility, shall be permitted only where overhead utilities | | | | | |
| 17 | | make larger tree planting impractical. | | | | | |
| 18 | | 4. All shrubs used to meet plant unit requirements shall be upright shrubs. | | | | | |

B. Rural and Suburban Tier

- 1. The buffer width and planting requirements in the table below shall be used to meet the opacity standards. Use of the interactive buffer model established pursuant to Sec. 9.4.7 shall not be permitted, except where the slope of the buffer is at least 15%, in which case the requirements of Sec. 9.4.5D shall be applied.
- **2.** When proposed residential units adjoin an active agricultural use, the minimum buffer width shall be 50 feet, with a minimum opacity of 0.2.

RURAL AND SUBURBAN TIERS

| | Min. | Alternative I | Alternative 2 | Alternative 3 | Alternative 4 | | | |
|----------------------------|---|-------------------------|-------------------------|-------------------------|-------------------------|--|--|--|
| Opacity Width Mixed Evergr | | Mixed Evergreen | Deciduous | Evergreen | Overhead Utility | | | |
| | Plant Material Required Per 100 Linear Feet | | | | | | | |
| | | I Canopy Tree | 2 Canopy Trees | 0 Canopy Tree | 0 Canopy Tree | | | |
| | | 0 Evergreen Tree | 0 Evergreen Tree | 2 Evergreen Trees | 0 Evergreen Tree | | | |
| 0.2 | 10 feet | I Deciduous Understory | 2 Deciduous Understory | 0 Deciduous Understory | 3 Deciduous Understory | | | |
| | | 2 Evergreen Understory | 0 Evergreen Understory | 3 Evergreen Understory | 2 Evergreen Understory | | | |
| | | 13 Shrubs | 12 Shrubs | 13 Shrubs | 10 Shrubs | | | |
| | | 3 Canopy Trees | 4 Canopy Trees | 0 Canopy Tree | 0 Canopy Tree | | | |
| | | I Evergreen Tree | 0 Evergreen Tree | 4 Evergreen Trees | 0 Evergreen Tree | | | |
| 0.4 | 20 feet | 2 Deciduous Understory | 6 Deciduous Understory | 0 Deciduous Understory | 7 Deciduous Understory | | | |
| | | 5 Evergreen Understory | 0 Evergreen Understory | 9 Evergreen Understory | 5 Evergreen Understory | | | |
| | | 40 Shrubs | 38 Shrubs | 38 Shrubs | 30 Shrubs | | | |
| | | 6 Canopy Trees | 7 Canopy Trees | 0 Canopy Tree | 0 Canopy Tree | | | |
| | | I Evergreen Tree | 0 Evergreen Tree | 7 Evergreen Trees | 0 Evergreen Tree | | | |
| 0.6 | 30 feet | 4 Deciduous Understory | 10 Deciduous Understory | 0 Deciduous Understory | 12 Deciduous Understory | | | |
| | | 9 Evergreen Understory | 0 Evergreen Understory | 16 Evergreen Understory | 9 Evergreen Understory | | | |
| | | 70 Shrubs | 67 Shrubs | 68 Shrubs | 53 Shrubs | | | |
| | | 6 Canopy Trees | 8 Canopy Trees | 0 Canopy Tree | 0 Canopy Tree | | | |
| | | I Evergreen Tree | 0 Evergreen Tree | 8 Evergreen Trees | 0 Evergreen Tree | | | |
| 0.8 | 50 feet | 4 Deciduous Understory | 11 Deciduous Understory | 0 Deciduous Understory | 13 Deciduous Understory | | | |
| | | 10 Evergreen Understory | 0 Evergreen Understory | 17 Evergreen Understory | 10 Evergreen Understory | | | |
| | | 77 Shrubs | 73 Shrubs | 74 Shrubs | 58 Shrubs | | | |
| | | 7 Canopy Trees | 10 Canopy Trees | 0 Canopy Tree | 0 Canopy Tree | | | |
| | | I Evergreen Tree | 0 Evergreen Tree | 10 Evergreen Trees | 0 Evergreen Tree | | | |
| 1.0 | 80 feet | 5 Deciduous Understory | 13 Deciduous Understory | 0 Deciduous Understory | 16 Deciduous Understory | | | |
| | | 12 Evergreen Understory | 0 Evergreen Understory | 20 Evergreen Understory | 12 Evergreen Understory | | | |
| | | 85 Shrubs | 80 Shrubs | 83 Shrubs | 65 Shrubs | | | |

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3. Buffer widths may be reduced by up to 25% through the incorporation of a wall or berm pursuant to Sec. 9.4.8. Application of this reduction in width shall provide a corresponding reduction in the number of required shrubs.

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C. <u>Urban, Compact, and Downtown Tiers</u>

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The buffer width and planting requirements in the table below shall be used to meet the opacity standards in the Urban Tier and those areas of the Compact and Downtown Tiers that adjoin development in the Urban or Suburban Tiers. The interactive buffer model established pursuant to Sec. 9.4.7 may be used to calculate acceptable reductions in buffer width or variable mixes of plant units. The model may also be used when the slope of the buffer is at least 15%, as set forth in Sec. 9.4.5D.

URBAN, COMPACT, AND DOWNTOWN TIERS

| | Min. | Alt. I | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | | |
|---------|---|--|--|--|--|--|--|--|
| Opacity | Width | Mixed Evergreen | Deciduous | Evergreen | Overhead Utility | Intense | | |
| | Plant Material Required Per 100 Linear Feet Of Buffer | | | | | | | |
| 0.2 | 10 feet | I Canopy Tree I Evergreen Tree I Decid. Understory I Evergr. Understory 3 Shrub | I Canopy Tree 0 Evergreen Tree I Decid. Understory 0 Evergr. Understory 4 Shrub | 0 Canopy Tree I Evergreen Tree 0 Decid. Understory 2 Evergr. Understory 4 Shrub | 0 Canopy Tree 0 Evergreen Tree 2 Decid. Understory I Evergr. Understory I Shrub | | | |
| 0.4 | I5 feet | 2 Canopy Tree I Evergreen Tree 2 Decid. Understory 3 Evergr. Understory 9 Shrub | 4 Canopy Tree 0 Evergreen Tree 3 Decid. Understory 0 Evergr. Understory 14 Shrub | 0 Canopy Tree 3 Evergreen Tree 0 Decid. Understory 5 Evergr. Understory 12 Shrub | 0 Canopy Tree 0 Evergreen Tree 5 Decid. Understory 3 Evergr. Understory 3 Shrub | | | |
| 0.6 | 20 feet (I) | 4 Canopy Tree I Evergreen Tree 3 Decid. Understory 5 Evergr. Understory 18 Shrub | 7 Canopy Tree 0 Evergreen Tree 5 Decid. Understory 0 Evergr. Understory 27 Shrub | 0 Canopy Tree 6 Evergreen Tree 0 Decid. Understory 9 Evergr. Understory 24 Shrub | 0 Canopy Tree 0 Evergreen Tree 9 Decid. Understory 5 Evergr. Understory 5 Shrub | 2 Canopy Tree 4 Evergreen Tree 2 Decid. Understory 0 Evergr. Understory 19 Shrub 6-Foot Wall (2) | | |
| 0.8 | 30 feet (I) | | | | 0 Canopy Tree 0 Evergreen Tree 13 Decid. Understory 7 Evergr. Understory 7 Shrub | 3 Canopy Tree 5 Evergreen Tree 3 Decid. Understory 0 Evergr. Understory 28 Shrub 6-Foot Wall (2) | | |
| 1.0 | 50 feet (I) | | | | 0 Canopy Tree 0 Evergreen Tree 13 Decid. Understory 7 Evergr. Understory 7 Shrub | 4 Canopy Tree 6 Evergreen Tree 4 Decid. Understory 0 Evergr. Understory 3 I Shrub 6-Foot Wall (2) | | |

⁽¹⁾ Use of the Intense Buffer will permit reduction of buffer width up to 25%.

D. Existing Slope Impacts

Commentary: Proposed projects may require more than one type of buffer. For example, a project site might include a modest slope along the southern property line (requiring a Flat Land buffer) and a 20% hill on the northern property line (requiring an Upslope Buffer).

⁽²⁾ A solid hedge composed of a minimum of 40 evergreen understory trees per 100 linear feet may be substituted for a 6-foot wall. 10

Sec. 9.4 Project Boundary Buffers

| 1 | 1. | <u>Buf</u> | fers v | with at Least 15% Slope |
|--|----|------------|--------|---|
| 2 | | a. | Gen | <u>ieral</u> |
| 3 4 5 | | | (1) | Buffer design changes depending on the degree of slope and whether the property being developed is up or down slope from the property being protected. |
| 6 7 | | | (2) | On slopes of at least 15% but less than 25%, for each 100 feet of buffer section length, an upslope or downslope buffer shall be required. |
| 8 9 | | | (3) | On slopes of least 25% for each 100 feet of buffer section length, a steep slope buffer shall be required. |
| 10 11 12 13 | | | (4) | Sloped buffer areas less than 100 feet in length, as measured parallel to the property line, and with less than five feet of difference in elevation between the project site and the adjacent property shall be exempt from providing slope buffers. |
| 14 | | b. | Dov | vnslope Buffer |
| 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 | | | (2) | Where the area containing the buffer slopes down from the adjacent property line toward the interior of the project site at a slope of at least 15% but less than 25%, the buffer may be less effective because roof areas may be exposed (the adjacent property looks down onto the proposed site). The developer may choose to use a steep slope buffer and retain the forest cover or provide a constructed buffer. If a constructed buffer is to be provided, 60% of the buffer width (starting at the property line) shall be graded to a slope of less than 15% with the adjacent land. The fill shall return to grade at a slope not to exceed 1:3 (33%). This may require a wider buffer to accommodate the fill. The interactive buffer model established pursuant to Sec. 9.4.7 shall be used to determine whether the buffer achieves the required opacity. |
| 33 | | c. | Ups | lope Buffers |
| 34 | | | - | are the area containing |
| 35 | | | | buffer slopes up from the |
| 36 | | | | cent property line Property |
| 37 | | | | ard the interior of the |
| 38 | | | | ect site at a slope of at |
| 39 | | | | t 15% but less than 25%, |
| 40 | | | | buffer may be more |
| 41 | | | | ctive due to the masking potential of the slope. In such cases, the |
| 42 | | | | eloper may choose to provide a standard project boundary buffer, a |
| 43 44 | | | | p slope buffer, or apply the interactive buffer model established suant to Sec. 9.4.7. |

2. Steep Slope Buffer (Slope at least 25%)

- a. On steep slopes, a natural buffer as set forth in Sec. 9.4.4 shall be retained. No healthy trees or shrubs shall be cut and no grading or clearing shall be permitted.
- b. If the buffer area is not tree-covered, or if the site has been cleared, disturbed, or logged within the last 10 years and no perimeter buffer pursuant to Sec. 8.3.4 was preserved, then the following additional standards shall apply. Sites which were logged and preserved a perimeter buffer pursuant to Sec. 8.3.4 may be required to provide supplemental plantings consistent with paragraph (2) below.

(1) Site Has Minimal or No Trees

Trees shall be planted in accordance with an afforestation program consistent with the table below. No more than 50% of the planted trees may be evergreens. Existing trees may be counted toward the required planting.

| Type of Tree | Size | Trees per Acre |
|------------------------|-----------------|-------------------|
| | 4-inch | 3 |
| Cananyar | 3-inch | 3 |
| Canopy or Evergreen | 2-inch | 10 |
| Lveigieen | I¼-inch | 20 |
| | container grown | 20 |
| Understory | I ½-inch | 10 |

(2) Site Was Replanted or is Undergoing Succession

- (a) Any portion of the site covered by a succession of trees having an average height of eight feet shall be considered to meet the buffer requirement.
- (b) Where the average height of the tree cover is less than eight feet, that portion of the site shall require trees planted in accordance with an afforestation program consistent with paragraph (1) above.

E. Specimen Trees Retained

Existing specimen trees, as defined in Sec. 8.3.1, that are located within a required project boundary buffer shall be retained, except where the Development Review Board determines that the removal of such trees is required to provide safe and reasonable access to the property.

F. Variations in Buffer Width

Buffer width shall normally be calculated as perpendicular to the property line, however, design variations may be allowed and shall be calculated based on the average width of the buffer per 100 feet or portion thereof. In no case shall the minimum width of the buffer be less than one-half the required width. The maximum width, for the purposes of installing required landscaping or receiving credit for existing vegetation, shall not be more than one and one-half times the required buffer width.

| 1 2 3 | 9.4.6 | Off-Site Vegetation Existing plant material on adjacent property may be credited toward buffer requirements, provided that: | | | | | |
|----------------------|-------|--|--|--|--|--|--|
| 4 | A. | Such material is in a permanently protected area, including, but not limited to: | | | | | |
| 5 6 | | 1. A conservation easement or other permanent preserve area on adjacent property; and | | | | | |
| 7 8 9 | | 2. Any permanently protected landscape buffer on adjacent property that exceeds the minimum required buffer width and plant material may receive credit for the excess plant material and width. | | | | | |
| 10 11 | В. | Notarized permission of the adjacent property owner to allow the credit shall be required. | | | | | |
| 12 | 9.4.7 | Interactive Buffer Model | | | | | |
| 13 | A. | Alternative Buffers Permitted | | | | | |
| 14 15 16 | | 1. To allow flexibility in buffer design, developers may use the interactive buffer model to create a buffer meeting or exceeding the opacity standards using a variety of widths, plant material, walls or berms. | | | | | |
| 17 18 19 | | 2. <u>In the Downtown, Compact, and Urban Tiers, the interactive buffer model may be used; however, no alternative buffer shall be permitted to be less than one-half the minimum width shown in the tables in Sec. 9.4.5C above.</u> | | | | | |
| 20 21 22 | | 3. <u>In the Rural and Suburban Tiers, the interactive buffer model shall not be used, except where the slope of the buffer exceeds 15%. Buffer width shall not be reduced through use of the model.</u> | | | | | |
| 23 24 25 | В. | Availability The interactive buffer model may be obtained upon request at the Planning Department during normal business hours. | | | | | |
| 26 27 28 29 | C. | Settings of the Model Settings for the interactive buffer model are maintained at the offices of the Planning Department. Model settings may be obtained upon request at the Planning Department during normal business hours. | | | | | |
| 30 31 32 | 9.4.8 | Walls, Berms and Fences in Buffers Where walls, berms or fences are built within any required project boundary buffer, they shall meet the following requirements. | | | | | |
| 33 | A. | Walls | | | | | |
| 34 35 36 37 | | All walls, when located within a buffer, shall be planted on the face towards the adjacent property with at least one upright shrub for every six feet of wall length. These shrubs may be counted towards meeting the opacity requirement for the buffer. | | | | | |
| 38 39 | | 2. Where shrubs are planted adjacent to a wall, the minimum distance between the wall and the property line shall be four feet. | | | | | |

1 3. The applicant shall be required to demonstrate provision for access and maintenance of landscaping and the wall structure at the time of landscape plan approval.

B. Berms

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Berms shall have side slopes of not less than three feet horizontal for each one foot vertical and a minimum crown width of two feet. Prior to issuance of the first certificate of compliance, berms shall be planted to ensure coverage by live plant material within three to five years.

C. Fences

Fences may be constructed in a required buffer; however, they shall not be counted towards required opacity of the buffer. Fences shall be maintained in a structurally safe and attractive condition and with finished faces and plantings located towards the adjacent property with at least one upright shrub for every six linear feet of fence length.

15 9.4.9 Separate Parcels for Stormwater Management

Where a separate legal parcel is permitted for stormwater management, it shall be included as part of the common site plan. If the stormwater tract adjoins a street or railroad right-of-way 50 feet or less in width, a buffer with a minimum opacity of 0.2 shall be required and planted in accordance with the Public Works Department's Reference Guide for Development.

9.4.10 Permitted Activity Uses Within Project Boundary Buffers Areas

Buffers shall be left in an undisturbed natural vegetative state or provided with supplemental plantings. Selective thinning of vegetation under 1½—inch caliper and removal of dead vegetation shall be permitted as long as the intent of the buffer requirement is maintained.

- **A.** Driveways or walkways may cross a <u>project boundary</u> buffer, <u>provided they cross</u> at as near a perpendicular angle as practical.
- B. Stormwater impoundments and utilities may be located in a buffer if the impacted area is replaced with an equal provided that an upland area that meets or exceeds such that the required width and plant material of the buffer is provided.

30 Grading in the designated buffer may be allowed with site plan approval if the revegetation plan is determined to meet the intent of this Section.

2 General

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- 3 The objective of land disturbance standards is to protect land from unnecessary erosion and
- 4 watercourses from sedimentation, and to minimize the off-site visual impact of extensive land
- 5 disturbance.

9.5.1 Land Disturbance Buffers

A. Applicability

- 1. Land disturbing activity of <u>one four acres</u> or more <u>in the Rural, Suburban and Urban Tiers</u> where no other site improvements are proposed shall require perimeter buffers <u>at all exterior lot lines pursuant to this section.</u> and revegetation as indicated below.
- 2. Buffers required by this section 8.1.29, Land Disturbance shall not no longer be required upon approval of a site plan for structural improvements (other than preliminary plat), on the tract, although buffers may be required by other provisions of the Durham Zoning this Ordinance. If a site plan for structural improvements or a final plat is approved, the required land disturbance buffer shall be retained until a project boundary buffer pursuant to Sec. 9.4 is installed.

Commentary: A site plan for buildings, not just utilities, must be approved to be relieved of the requirements of this section.

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42 43 The requirements of section shall not apply to land disturbing activity associated with construction in street and utility rights-of-way or easements.

24 Perimeter Buffers

The intent of perimeter buffers is to visually screen views of graded tracts from surrounding properties and from adjacent streets. The preservation of existing vegetation to achieve the intent of this section is strongly encouraged.

B. Buffer Standards

1. General

- a. All specimen trees shall be preserved within land disturbance buffers.
- b. No grading shall be allowed within land disturbance buffers except to provide reasonable access and for utility installation.
- c. <u>Land disturbance buffers shall be in place before other site improvements begin.</u>

2. Adjoining Other Properties

- a. Perimeter land disturbance buffers adjoining other properties (along exterior property lines) shall be a minimum of 32 feet in width, measured perpendicular to the boundary of the site.
- b. provided that Such buffers shall consist of existing trees with supplemental vegetation added, when necessary, that meets or exceeds an opacity of 0.6 on average every 100 feet as determined through use of the interactive buffer model pursuant to Sec. 9.4.7 or use of the appropriate table in Sec. 9.4.5. achieve the standards of Buffer Intensity Class 4 through

| 1 | | | | landscaping or preserving existing vegetation. in accordance with the | | | | | |
|----------|---|--------------------|-------------------|--|--|--|--|--|--|
| 2 | requirements of Section 10.2.5, Landscaping Requirements for Buffer | | | | | | | | |
| 3 | Areas. Where existing trees and vegetation do not meet this standard, | | | | | | | | |
| 4 | appropriate supplemental plantings shall be required. | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | Perimeter b | uffer | s sha | all be provided on the development tract at all exterior property lines. | | | | | |
| 7 | However, Perimeter buffers shall not be required along common internal boundaries of multiple | | | | | | | | |
| 8 | parcels that make up a development project. | | | | | | | | |
| 9 | | | | all be in place before other site improvements begin. | | | | | |
| 10 | | | | s required by Section 8.1.29.1, Perimeter Buffers shall no longer be required | | | | | |
| 11 | | | | other structural improvements is approved, although buffers may be | | | | | |
| 12 | | | | ovisions of the Durham Zoning Ordinance. | | | | | |
| 13 | | | - | posing Land Disturbing Activity | | | | | |
| 14 | | | | t propose land disturbing activity mass grading shall provide perimeter | | | | | |
| 15 | buffers on the | he tra | act a | t all exterior property lines. The intent of these buffers is to visually screen | | | | | |
| 16 | | | | such tracts from surrounding properties. | | | | | |
| 17 | | | | buffers shall not be required along common internal boundaries of multiple | | | | | |
| 18 | | | | a development project. | | | | | |
| 19 | - | | - | acent to public rights-of-way shall meet the requirements of paragraph 3 | | | | | |
| 20 | below. | | | A control of the cont | | | | | |
| 21 | Perimeter la | and d | listu | rbance buffers not located along public rights-of-way shall be a minimum of | | | | | |
| 22 | | | | sured perpendicular to the boundary of the site. and | | | | | |
| 23 | | | | hieve the a minimum opacity of 0.4 standards of Buffer Intensity Class 2 in | | | | | |
| 24 | | | | ion 10.2.4, Buffer Width. | | | | | |
| 25 | If the perim | eter | buffe | er contains vegetation insufficient to achieve this standard, the preliminary | | | | | |
| 26 | | | | evegetation plan showing landscaping materials to be installed in order to | | | | | |
| 27 | achieve the | | | | | | | | |
| 28 | All specime | n tre c | e s sh | all be preserved within the perimeter land disturbance buffer. | | | | | |
| 29 | | | | llowed within perimeter buffer, with the exception of grading required for | | | | | |
| 30 | utility instal | | | | | | | | |
| 31 | Perimeter la | and d | listu | rbance buffers shall be in place before other site improvements begin. | | | | | |
| 32 | | | | s required by this section 5.R, Grading Plan and Mass Grading Buffers that | | | | | |
| 33 | are associated with any lot shall no longer be required when a building permit is issued for | | | | | | | | |
| 34 | | | | ion on that lot. | | | | | |
| 25 | | | ۸ ما: د | sining Dublic Dights of Way | | | | | |
| 35 | • | | - | oining Public Rights-of-Way | | | | | |
| 36 | <u>Land disturbance buffers along public right-of-way shall be:</u> | | | | | | | | |
| 37 | | ; | a. | At least 50 feet in width measured perpendicular to the boundary of the | | | | | |
| 38 | | | | site; and | | | | | |
| | | 1 | | | | | | | |
| 39 | | | b. | Such buffers shall consist of preserved vegetation, with supplemental | | | | | |
| 40 | | | | vegetation added, when necessary, that meets or exceeds an opacity of 0.8 | | | | | |
| 41 42 | | | | on average every 100 feet, as determined through use of the interactive | | | | | |
| | | | | buffer model pursuant to Sec. 9.4.7, exclusive of areas for reasonable | | | | | |
| 43 44 | | | | access or for utility installation. Where existing trees and vegetation do | | | | | |
| 44 45 | | | | not meet this standard, appropriate supplemental plantings shall be | | | | | |
| | 1 00 1 7 | | | required. | | | | | |
| 46 | | I als e | be j | provided along all public rights of way and shall be achieved by any of the | | | | | |
| 47 | following: | | | | | | | | |

- 1 A 30-foot strip of buffer of at least 30 feet in width containing preserved vegetation provided
- 2 along the public right-of-way frontage, where such vegetation meets or exceed an opacity of 0.6
- 3 on average every 100 feet; or
- 4 A six-foot high that achieves the standards of Buffer Intensity Class 3 through landscaping or
- 5 preserving existing vegetation in accordance with the requirements of Section 10.2.5,
- 6 Landscaping Requirements for Buffer Areas; or
- 7 Larger groupings of preserved vegetation comparable in total square footage to that which
- 8 would have been provided by the 30-foot strip of preserved right-of-way vegetation, provided
- 9 that a minimum of 50% of the public right-of-way frontage is screened; or
- 10 Alternate designs proposed by the owner or developer, provided that such designs are
- 11 determined by the Development Review Board to be comparable in screening effect.

12 **9.5.2 Exemptions**

Forestry activities conducted in conformance with a Forest Management Plan that uses the current best management practices set out in "Forest Practice Guidelines Related to Water Quality," as adopted by the North Carolina Department of Environment and Natural Resources shall not require a land disturbance buffer; however, in the City, if a 32-foot wide buffer of undisturbed vegetation (exclusive of driveway access) is not maintained around the perimeter of the site pursuant to Sec. 8.3.4, development of the site shall be prohibited for a period of five years from the date of the forestry activities. Forestry activities shall be conducted in conformance with Section 8.1.3, Forestry.

9.5.3 Revegetation Plan

Commentary: Revegetation is required only where land disturbing activity has taken place, and no site plan for improvements has been approved within two years.

26 Intent

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The intent of revegetation is to reduce the opportunity for erosion on sites that have had land disturbing activity, and to protect nearby watercourses from sedimentation.

A. <u>Applicability</u>

- 1. <u>An owner shall have two years</u> from the date that a site plan is approved for land disturbing activity <u>subject to this section</u> of one acre or more where no other tract improvements are proposed the owner shall within two years either to secure site plan approval for development of the tract or to revegetate the site.
- Revegetation required by this section shall not be required upon approval of a site plan including structural improvements (other than a preliminary plat) for that portion of the development tract with proposed structural improvements. The remainder of the development tract shall continue to require revegetation until a site plan showing structural improvements (other than a preliminary plat) is approved for such remaining portions.

Failure to secure site plan approval for structural improvements on the tract or to revegetate the tract shall constitute a violation of the Durham Zoning ordinance.

B. Revegetation Standards

1. So long as the required land disturbance buffers pursuant to this section have been provided and maintained, revegetation of a tract that meets the standards for ground cover established in Sec. 12.10.6 shall be sufficient for revegetation.

| 1 | 2. <u>If the required land disturbance buffers were not provided and maintained,</u> revegetation of a tract shall create a biological community composed of a mixed |
|--------|--|
| 3 | and variable assemblage of native vegetation which is appropriate for the |
| 4 5 | existing site conditions, including canopy trees, and understory trees , tall and low shrubs and herbaceous plants . |
| 6 | The revegetation shall result in a tree density of at least 200 living trees per acre, with at least |
| 7 | 0% of those trees having the potential of attaining a two and one half inch or greater diameter |
| 8 | neasured at a point 4½ feet above the ground within seven years. At least three different |
| 9 | pecies of trees native to the region shall be represented in the revegetation. |
| 10 | performance bond shall be required in order to ensure that such revegetation is accomplished |
| 11 | n a timely manner. The performance bond shall be posted prior to site plan approval and shall |
| 12 | e in an amount determined by the Director or designee. of Planning or his designee. |
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Sec. 9.6 Street Trees

2 Purpose

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- 3 The primary objective of street tree standards is to create a built environment that benefits from
- 4 the aesthetic and environmental qualities of an extensive tree canopy along streets and
- 5 highways. Trees along streets are attractive amenities that improve the appearance of the
- 6 community, providing shade and visual interest. Trees along streets improve air quality, reduce
- 7 stormwater runoff, provide wildlife habitat and moderate the micro-climate impacts of heat
- 8 absorbed by paved surfaces. Street tree standards promote an appropriate balance between the
- 9 built environment and the preservation of natural vegetation.

10 9.6.1 Applicability

- A. After June 21, 1999 (City Jurisdiction) and June 28, 1999 (County Jurisdiction), All development and land disturbing activity shall be conducted in accordance with this section, 10.5, Street Tree Standards except as follows that additions to existing residential buildings on single-family residential lots of record recorded prior to June 21, 1999 (City Jurisdiction) and June 28, 1999, (County Jurisdiction), shall be exempt from the provisions of this section. 10.5, Street Tree Standards.
- **B.** Residential development utilizing the RR District in the Rural Tier shall be exempt from the provisions of this section.

19 Single-family residential development inside the Urban Growth Area on lots platted prior to

20 June 21, 1999 (City Jurisdiction) and June 28, 1999 (County Jurisdiction) for which a

- 21 continuously valid building permit has not been issued shall be required to retain or plant least
- 22 one street tree for every 30 feet of street frontage.
- 23 Existing trees to be retained to meet this requirement shall be protected in accordance with
- 24 Section ____, Protection of Existing Vegetation.
- 25 New shall be planted in accordance with Section ____, Street Tree Installation.
- 26 Single family residential development on lots platted prior to June 21, 1999 (City Jurisdiction)
- 27 and June 28, 1999 (County Jurisdiction) for which a continuously valid building permit has
- 28 been issued as of June 21, 1999 (City Jurisdiction) and June 28, 1999 (County Jurisdiction) shall
- 29 be exempt from the requirements to Section. 10.5, Street Tree Standards.

9.6.2 Required Street Trees

- A. In all residential developments in all tiers except residential development in the Rural Tier exempted from these standards pursuant to Sec. 9.6.1B, inside the Urban Growth Area the developer shall either retain or plant trees such that there is an average of at least one street tree for every 30-40 feet of street frontage along both the sides of all existing and proposed rights-of-way (except alleys), and private street easements. Street trees may be located within the right-of-way with the approval of the City Public Works Director or the NCDOT, or designees as appropriate, except where the location of the street trees in the right-of-way will conflict with public utilities. If a conflict exists with public utilities, street trees shall be located in the required street yard.
 - B. The location of <u>street</u> trees may be varied, as long as there is a minimum of one tree every 100 feet of street frontage, <u>unless the Development Review Board approves an alternate pattern to allow design flexibility for location of access points, sight clearance, or other similar factors.</u>
- shall not be required for residential developments outside the Urban Growth Area.
- 46 Residential Development

- 1 Property owners and developers shall be responsible for making a good faith effort to protect
- 2 existing or installed in accordance with standard horticultural practice and Section _____,
- 3 Protection of Existing Vegetation. Such good faith efforts over 12 months from the issuance of a
- 4 Certificate of Compliance shall be deemed to meet the requirements of Section 10.5.2, for
- 5 Residential Development.

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- **6** Nonresidential Development
- 7 In all nonresidential developments that do not have street yard plantings, the developer shall
- 8 either retain or plant trees along any frontage with adjacent public right of way such that there
- 9 is an average at least one street tree for every 30 feet of street frontage.
- 10 Driveway widths may be subtracted from the feet of frontage.

9.6.3 <u>Credit for Existing Trees</u>

- A. Developers are encouraged to may use existing trees to meet the requirements of this section, 10.5, Street Tree Standards as long as existing trees are protected in accordance with the standards of Sec. 8.3.3, Protection of Existing Vegetation.
- B. Existing trees preserved to meet other requirements of <u>this Ordinance</u> the Zoning Ordinance may be used to meet the requirements of <u>this</u> section 10.5, Street Tree Standards as well, provided they meet the minimum size and location requirements.
- 18 C. Existing trees shall be credited as street trees pursuant to Sec. 9.3.2 if such trees are located within 30 25 feet of the street right-of-way, and in a required street yard.
 - **Commentary:** Trees that would be located in a side yard behind the front building line (where a fence could be built) or located behind any portion of a building cannot be used for credit.
 - D. Street tree credit shall be granted to a development in the Urban, Compact, and Downtown Tiers for preserving existing trees in public right-of-way or private access easements adjacent to the development tract provided that the root zone protection zone outside of the public right-of-way is protected, and the location of the trees has been approved by the Directors of Planning and Public Works, or designees as appropriate.

9.6.4 Street Tree Installation

- 30 A. Required street trees to be provided in accordance with Section 10.5, Street Tree
 31 Standards shall be clearly noted on any development plan, site plan, preliminary plat,
 32 or final plat, major special use permit or minor special use permit.
 - **B.** Street trees shall be of a species included on the <u>Planning Director's</u> list of acceptable street tree species. adopted by the Planning Director or the Director's designee.
 - C. Street trees shall be planted in accordance with Section 10.5, Street Tree Standards and shall be at least two and one-half inch caliper, unless an alternate size which addresses unique site characteristics is approved by the Planning Director, or designee. caliper. measured 4 1/2 feet above the ground.

street trees shall be located within the front setback area and

D. <u>In the Suburban and Rural Tiers street trees</u> shall not be located—with in, or within four feet of, any street right-of-way or within any right-of-way easement without prior approval from the City Public Works Director or the NCDOT, or designees as appropriate. However, The Director of Public Works or the Director's appointee shall

Sec. 9.6 Street Trees

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have the authority to approve street tree planting in the street right-of-way in situations where street trees will not conflict with public utilities or the provision of other public services.

The Planning Director or the Director's designee shall have the authority to vary, on a case-by-case basis, the amount, and size of required street trees where an alternative requirement would address unique site conditions and allow design flexibility while still serving the objectives for street tree standards.

- E. <u>In the Suburban and Rural Tiers, at least 250 square feet of contiguous not encroached growing area without encroachments</u> shall be provided for each tree. The <u>Director of Public Works Director, or designee, or the Director's appointee</u> shall have the authority to approve a street tree growing area of smaller size where special features are utilized in the site design to provide for adequate growth of street trees.
- F. In the Urban, Compact, and Downtown Tiers, at least 200 square feet of contiguous growing area, without encroachments other than sidewalks, shall be provided for each tree. The Public Works Director, or designee, shall have the authority to approve a street tree growing area of a smaller size where special features are utilized in the site design to provide for adequate growth of street trees.
- **G.** Planting location shall take into consideration any roadway widening identified on approved thoroughfare plans but not provided by the development.
- H. Required street trees required by Section 10.5, Street Tree Standards on any lot shall be planted before a Certificate of Compliance is issued, except that for developments other than single-family residential developments, where unless the planting may be has been postponed to the appropriate season in accordance with the requirements of Sec. 9.11, Administration. 10.8, Request for Extension of Compliance with Landscaping Requirements.

27 Buffer Width

- 28 Buffer width is based on the following intensity classifications:
- 29 Class 1
- 30 Cemeteries, golf courses, passive recreational areas, wholesale nurseries, day care homes.
- 31 Class 2
- 32 Offices (3 stories or less), churches, schools, public facilities including playgrounds, ball fields,
- 33 community swimming pools, and similar facilities, day care facilities, multifamily (developed at
- 34 less than or equal to 16 units per acre and/or less than 12 units total).
- 35 Class 3
- 36 Neighborhood commercial and service activities, including but not limited to retail operations,
- 37 restaurants (without drive-up windows), banks (without drive-up windows), convenience stores
- 38 (without gasoline sales), offices (over 3 stories), multifamily (developed at greater than 16 units
- 39 per acre).
- 40 Class 4
- 41 Commercial activities with higher vehicle activities, including but not limited to vehicle repair,
- 42 service stations, drive-up window restaurants and banks, car washes, hotels and motels,
- 43 shopping centers. Also, light manufacturing activities and research facilities.
- 44 Class 5
- 45 Heavy industrial uses, heavy manufacturing, truck terminals, mobile home sales, vehicle sales,
- 46 heavy equipment sales, facilities involving outdoor storage and outdoor commercial recreation
- 47 establishments.
- 48 Required WidthBuffer
- 49 Intensity Buffer

- 1 Width
- 2 Class 1 10 feet
- 3 Class 2 20 feet
- 4 Class 3 30 feet
- 5 Class 4 50 feet
- 6 Class 5 80 feet
- 7 Required yard spaces may be used to meet buffer requirements.
- 8 Buffers shall be planted in conformance with Sections 10.2.5 and 10.7
- 9 No buffers shall be required for property in the CBD District.
- 10 The approving authority, at time of site plan approval, may reduce buffer widths and required
- 11 plantings by up to 50% if the site plan indicates berming, alternate landscaping, walls, opaque
- 12 fence or topographic features which will achieve the intent of this section and are designed to
- 13 complement adjacent properties. Berms may not have a slope greater than 2 to 1 and must have
- 14 a crown width of at least 2 feet. Reductions of more than 50% shall not be considered without
- 15 written approval from the adjoining property owners.
- 16 Required Buffer Width In Feet Based On Buffer Intensity Classification And Adjacent Property
- 17 Use And Zone
- 18 Buffer Intensity Class (BIC) Adjacent Property Use And Zone
- 19 Developed Residential
- 20 Zone * Vacant Residential
- 21 Zone * Residential Use* in Nonresidential
- 22 Zone Developed Multifamily
- 23 Zone Vacant Multifamily
- 24 Zone
- 25 BIC 1 10' 5' 5' 10' 5
- 26 BIC 2 (NR) 20' 10' 10' 20' 10
- 27 BIC 2
- 28 (MF<12
- 29 total and/or
- 30 <16units/
- 31 ac) 20' 10' 10' 10' 10'
- 32 BIC 3 (NR) 30' 15' 15' 30' 15'
- 33 BIC 3
- 34 (MF 12+
- 35 total and
- $36 \frac{16+}{1}$
- 37 units/ac) 30' 15' 15' 15' 15'
- 38 BIC 4 50' 25' 25' 50' 25'
- 39 BIC 5 80' 40' 40' 80' 40'
- 40 NR = Nonresidential MF = Multifamily
- 41 * Residential in this table refers to single-family, two-family and three-family residences only
- 42 Landscaping Requirements for Buffer Areas
- 43 Existing Vegetation
- 44 Buffers require provision of both physical separation and landscape elements to meet the intent
- 45 of this ordinance. Existing vegetation shall be used to meet all or part of the requirements of this
- 46 section wherever possible, if it provides the same level of obscurity as the planted buffer
- 47 required below. Vegetation to be saved shall be identified on site plans along with protection
- 48 measures to be used during grading and construction. See Section 10.9 for protection measures
- 49 required and calculation of credits for existing trees.
- 50 Planted Vegetation

Sec. 9.6 Street Trees

- 1 Required plantings allow for a mix of large shade trees, small trees/large shrubs, and smaller
- 2 shrubs to provide variable height screening, and a variety of plantings and seasonal color.
- 3 Evergreen trees are added to the wider buffers to provide a more opaque screen, as well as a
- 4 more natural appearance to the buffer. The mix is designed to create a buffer which will give a
- 5 satisfactory screen within 3 to 5 years of planting, under normal maintenance, while allowing
- 6 room for the various plants to grow.
- 7 Planting requirements for buffers include both trees and shrubs as described below. In
- 8 calculating buffer planting requirements, areas of driveways and sight distance triangles are
- 9 excluded.
- 10 Tree Standards
- 11 This requirement may be satisfied as follows:
- 12 Large trees with a minimum size of 11/2-2 inch caliper at planting at the following minimum
- 13 rates.
- 14 Required Buffer Width One Tree Per
- 15 20 ft. or less 200 sq. ft. of buffer
- 16 21 ft. to 30 ft. 300 sq. ft. of buffer
- 17 31 ft. to 50 ft. 350 sq. ft. of buffer
- 18 >50 ft. 400 sq. ft. of buffer
- 19 Small trees/large shrubs are required to fulfill from no less than 20% to no more than 30% of
- 20 the required number of trees in (1) above. Additionally, evergreen trees are required to fulfill at
- 21 least 50% of required trees planted in buffer intensity classes 3, 4 and 5.
- 22 Evergreen trees and small trees/large shrubs, each with a minimum height of 8 feet, are to be
- 23 planted at the same rates as the large trees; or,
- 24 Two evergreen or small trees/large shrubs for each one required above, with a minimum height
- 25 of 4.5 feet at planting, may be substituted.
- 26 Trees shall be distributed along the entire length of the buffer. Due to unique characteristics of a
- 27 site, or design objectives, alternative plant mixes may be approved.
- 28 Shrub Design Standards
- 29 Evergreen shrubs, a minimum of 18 inches (1.5 feet) in height, of a variety that can be expected
- 30 to reach 4 to 5 feet in height within 3 to 5 years of planting, shall be provided. Shrubs shall not
- 31 normally be planted closer than 6 feet on center. Additionally, shrubs shall not normally be
- 32 planted closer than 6 feet to planted trees, nor within the drip line of existing, protected trees.
- 33 Shrubs shall be distributed along the entire length of the buffer. Evergreen shrubs shall be
- 34 provided at the following rates.
- 35 Required Buffer Width One Shrub Per
- 36 20 ft. or less 50 sq. ft. of buffer
- 37 21 ft. to 30 ft. 75 sq. ft. of buffer
- 38 31 ft. to 50 ft. 125 sq. ft. of buffer
- 39 >50 ft. 200 sq. ft. of buffer

Sec. 9.7 Screening

2 9.7.1 Applicability

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- A. <u>Class B outdoor storage</u>, loading areas, <u>self-storage</u> warehouses, a<u>nd other uses</u>

 requiring screening pursuant to Sec. 5.3, shall normally be screened <u>pursuant to this</u>

 section. from unobstructed off-site views.
 - **B.** Air handlers and similar mechanical equipment in multifamily or nonresidential development shall require screening pursuant to this section.
 - C. <u>Trash handling facilities, including dumpsters and recycling, shall be screened pursuant to this section.</u>
 - uses requiring screening, as noted in, shall be screened according to the requirements of this section.
 - D. The features and uses <u>listed above</u> need not be screened from similar features and uses on adjacent lots and within the CBD <u>Downtown Tier and I District, except where project boundary buffers would be required pursuant to Sec. 9.4. CT, I-2 and I-3 zones, except as required under Section 10.2.</u>

16 **9.7.2 Standards**

- Features and uses specified above, as requiring screen/buffers shall provide a visual obstruction from adjacent properties in conformance with the following standards:
- A. The screen may be composed of view-obscuring vegetation (used individually, or in combination with), a wall, semi-opaque fence, or berm designed to obscure views to a height of eight feet from the ground, except for mechanical equipment which shall be screened to the height of the equipment plus six inches. The items may be used individually or in combination.
 - B. The interactive buffer model described in Sec. 9.4.7 may be used to design this screen. When vegetation is the primary source of screening, the result shall be a semi-opaque (75 percent) screen with an opacity of at least 0.8 that obscures views from the ground to a the height of the object being screened; however, the screen is not required to exceed eight feet.
 - C. Plant materials shall be at least two feet tall at the time of installation and reach the desired height within three to five years of planting.
 - D. When a combination of features is proposed, one-third of the Except for screening around roof-top equipment, one upright shrub shall be installed per four linear feet of any surface area of all wall / or fence or berms that faces off-site. must be covered with plant material within three to five years.
- 35 E. All berms shall be covered with plant materials within three to five years.
- Additionally, Screen areas shall be sufficient to allow for the mature growth of plant materials
 when used.

9.7.3 Credit for Other Landscaping

Plant material located in project boundary buffers located to also serve the screening function of this Section shall <u>may</u> be counted towards the requirements of this section when located to serve both functions.

Sec. 9.8 Vehicular Use Area Landscaping

2 Purpose

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- 3 In order to reduce reflected sunlight and headlight glare from parked vehicles, as well as to
- 4 maintain a separation between vehicles and other uses and to reduce the effects on the
- 5 environment of vehicle parking facilities, the following standards are provided. Vehicle areas
- 6 used for drive up windows and areas adjacent to gas pumps are included as vehicle parking
- 7 facilities in this Section.

9.8.1 General

A. Applicability

The following areas shall meet the requirements of this section.

- 1. For the purposes of this section, areas used for vehicle service, parking (including structured parking), parking lot drive aisles, and business transactions such as areas adjacent to gasoline pumps (even if under a canopy) and areas for drive-up service, shall be considered parking vehicular use areas and shall comply with the requirements of this section. Driveways that are perpendicular or nearly perpendicular to the street and serve as an entrance to the site shall not be considered vehicular use areas for purposes of this section.
- 2. Any new off-street parking area containing four or more spaces, or vehicular use area of 1,500 square feet or more (except for parking associated with single-family or two-family development on single lots). or major addition (15 percent or greater) to an off-street parking area that has exposure to a public street and is located within 50 feet of a right-of-way shall provide a landscaped area meeting the requirements below.
- **3.** Any addition of four or more parking spaces to an existing off-street vehicular use area constructed before the effective date of this Ordinance.
- 4. On sites where a building is torn down and reconstructed on the same site, all requirements of this section shall be met, regardless of whether or not the new building is larger than the original building if the new building will require a minimum of four parking spaces.

B. Standards

- 1. No canopy trees used for vehicular use area landscaping credits shall be planted farther than 10 feet from the edge of the vehicular use area. No understory trees or shrubs shall be planted farther than 15 feet from the edge of the vehicular use area. All shrubs and trees shall be located at least three feet from either the back of curb of the vehicular use area or back of wheel stops.
- **2.** Evergreen trees and large shrubs, when used, Plant materials shall be located to facilitate safe sight distances within parking lots. Shrubs located at the end of parking lot islands, near drives, or in medians shall not exceed a mature height of 30 inches.
- **3.** Required landscaping areas may be crossed by driveways perpendicular, or nearly perpendicular, to the property lines and planting areas.
- **4.** Tree planting and site lighting shall be coordinated to reduce conflicts between mature trees and light standards.

9.8.2 Vehicular Use Area Perimeter Landscaping

A. Vehicular Use Areas Visible From Streets

1. Applicability

Any vehicular use area subject to this section that has exposure to a public or private street (except an alley), and is located within 50 feet of a right-of-way or access easement shall provide a landscaped area, adjacent to and outside of the street right-of-way or access easement, equal to six square feet for each linear foot of street frontage, less driveways. and sight distance triangles.

2. Standards

- a. <u>Any</u> landscaped area used for credit shall be a minimum of three feet and a maximum of 25 feet in width <u>in all Tiers except Compact and Downtown</u>, where the maximum width shall be 10 feet.
- b. Large Canopy trees (unless subject to overhead power line conflicts, where understory trees shall be used instead) shall be planted at the rate of one 2½-inch caliper tree per 30 40 lineal linear feet of vehicular use area along the street, property line abutting a public street, less driveway widths. and sight distance triangles. This rate may be varied based upon size of installed trees and mature spread of proposed trees.
 - (1) Areas with large canopy trees shall be at least 10 feet deep from right-of-way to back of curb or pavement edge, and shall provide 250 square feet of contiguous growing area for each tree not encroached upon by shrubs or impervious pavement in the Suburban and Rural Tiers. In the Urban, Compact, and Downtown Tiers, the minimum contiguous growing area shall be 200 square feet and sidewalks may be permitted to encroach in that growing area.
 - (2) Credit <u>shall be</u> given for existing, healthy, protected trees according to <u>Sec. 9.3.2</u>, for project boundary buffer canopy trees pursuant to <u>Sec. 9.4</u> (to the extent such trees are located to serve the function of <u>this section</u>) and for street trees pursuant to <u>Sec. 9.6</u>. Section 10.9.
 - (3) Trees shall not be planted within sight distance triangles.
- Evergreen Shrubs shall be planted at the rate of one 15—to 18-15—inch high shrub per three lineal linear feet of property line abutting public streets less driveways. Such shrubs shall be of a species expected to reach a minimum height of 30 inches and a minimum spread of 30 inches within three to five years of planting. This rate The spacing may be varied based upon size of installed plant materials.
 - (1) Shrubs shall be planted such that no less than 50% of the length of the parking vehicular use area lot frontage, to a height of 30 inches, is obscured from view after three to five years of growth.
 - (2) At least 60% of shrubs shall be evergreen may be deciduous.
 - (3) Shrubs planted within sight distance triangles shall be of a <u>species</u> type with a maximum mature height of 24 inches.
- Shrubs shall not be planted within 6 feet of the trunk of a new tree, nor within the dripline of a protected, existing tree.

Sec. 9.8 Vehicular Use Area Landscaping

| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | minimum every one combinati combinati or vehicul Buffers or streets ma Trees plan within 25 | foot vion witten of the service of t | rn wid vertica ith sm the b e area ens pr all be o o mee of the | (4) A masonry wall consistent with the requirements of Sec. 9.9 or fence, at least 30 inches tall and of a material compatible with the building may be substituted for the required shrubs. , provided that one third of the surface area of all fences or walls that faces off-site must be covered by plant material (except the CBD) within three to five years after installation. ed within the street yards with a minimum height of one half foot, the of two feet, and side slopes of no greater than four feet horizontal for all 2:1. Berms shall be planted with live vegetation, and may be used in haller plants to meet the required screening area, provided that the erm and the shrubs obscures no less than 50% of the length of the parking to a height of 30 inches after three to five years of growth. Evoluted towards considered in fulfilling the requirements of this section. It requirements for landscaping within parking lots that are also located right of way line may be counted toward both requirements (street trees |
|---|---|--|---|---|
| 17 | and parki | ng lot | lands | caping). |
| 18 | В. | Veh | nicula | r Use Areas Visible from Adjacent Property |
| 19 | | 1. | <u>App</u> | <u>licability</u> |
| 20 21 22 23 24 | | | a. | Any parking vehicular use area subject to this section on projects not required to provide a project boundary buffer pursuant to Sec. 9.4 visible from adjacent property that contains four or more parking spaces shall provide a landscaped area between the edges of the pavement and the side or rear lot lines of the property. |
| 25 26 | | | b. | This requirement does not apply to property lines falling within a parking lot in common use. |
| 27 | | 2. | <u>Star</u> | <u>ndards</u> |
| 28 29 30 31 32 33 34 | | | a. | The minimum size width of this the landscaped area shall be computed at the rate of three square feet per six feet per linear foot of vehicular use area edge facing off site, unless wheel stops are provided, in which case the minimum width may be reduced to four feet. property line, but in no case shall the width of this required area be less than three feet. An additional three feet of width may be required by the approving authority when a narrower width would have a detrimental effect on the required plantings. |
| 35 36 37 | | | b. | Required landscaping shall consist of evergreen shrubs, 18—to 24-inch minimum height, at the rate of one per four lineal linear feet of required planting area property line. |
| 38 39 | | | | number of shrubs required, the full length of property line with an parking area from adjacent properties shall be used. |
| 40 41 | | | c. | Up to one-half of the property line landscaping may be provided as follows: |
| 42 43 44 45 | | | | (1) Evergreen or deciduous <u>canopy</u> trees, at the rate of one large tree per 25 <u>linear</u> feet of <u>vehicular use area property line</u> , to be planted within an area with a minimum dimension of 10 feet in the vicinity of the tree, and with a contiguous growing area of <u>200</u> 250 square feet. |

| 1 2 | | | | <u>Larger growing areas may be required, depending on the species of the tree planted.</u> | | | | | |
|--|---|--|---------------|--|--|--|--|--|--|
| 3 4 5 | (2) | | | (2) <u>Understory</u> Small trees, <u>/large shrubs</u> , at the rate of one per 18 feet, with a contiguous growing area of 125 square feet and a minimum dimension of seven and one half feet. | | | | | |
| 6 7 8 9 10 11 12 | adja <u>the</u> lot s <u>pro</u> dev | | | en adjoining properties are already developed with parking lots acent to the proposed site and have with landscaping installed to satisfy requirements of this section meet this requirement, the new parking shall be screened with 50% of the required plant materials shall be vided. plantings. When an adjoining property is vacant or being eloped at the same time, 50 percent of the required plantings shall be vided. | | | | | |
| 13 14 15 | This required area may be crossed by drives or aisles for parking areas on adjacent properties. Installation of landscape materials shall take into consideration the maintenance of proper sigle distances for safe traffic movement. | | | | | | | | |
| 16 | 9.8.3 | Lan | ndsca | ping within Vehicular Use Areas | | | | | |
| 17 | A. | <u>App</u> | <u>licabi</u> | llity | | | | | |
| 18 19 20 | | 1. | feet (| lopment with <u>vehicular use</u> parking areas exceeding <u>3,000</u> <u>5,000</u> square including accessory drives and aisles) on the same parcel shall provide and tain landscaped areas based upon the surfaced <u>vehicular use</u> parking area. | | | | | |
| 21 22 23 24 | and porti 25 feet or | | | under canopies <u>and within structured parking</u> loading and service areas rtions of drives with no parking on either side for a distance longer than or used exclusively as access to loading or service areas are <u>shall be</u> t from this requirement. | | | | | |
| 25 26 27 | | 3. The landscaping within <u>vehicular use</u> parking e areas shall be provided in addition to <u>all other landscaping or screening</u> buffer requirements of this <u>Art ordinance</u> . | | | | | | | |
| 28 | В. | <u>Sta</u> | ndard | <u>s</u> | | | | | |
| 29 | | 1. | <u>Gene</u> | <u>eral</u> | | | | | |
| 30 31 32 | | | | Areas used for landscaping shall be provided in the amount equivalent to at least $\frac{15\%}{7.5}$ of the $\frac{15\%}{100}$ of the $\frac{15\%}{10$ | | | | | |
| 33 34 35 36 | | | | All landscaped areas surrounded by impervious surfaces shall have a minimum width of 10 feet when they include canopy or understory trees, and shall contain at least 200 square feet of growing area per tree. Larger growing areas may be required, depending on the species of tree planted. | | | | | |
| 37 38 39 40 41 42 43 | | | | Minimum curb radii of three feet are shall be required on the corners of all tree islands and medians to allow for free movement of motor vehicles around planting materials. All islands or medians shall have raised edging or other devices (such as wheel stops) around them to further protect plants from being run over by motor vehicles. Medians without raised edging shall include devices to stop vehicles from driving into the planted areas. | | | | | |

Sec. 9.8 Vehicular Use Area Landscaping

2. 1 **Trees** 2 Tree planting areas shall be located such that no parking space is farther 3 than <u>50 75</u> feet from a <u>canopy</u> tree trunk. 4 Trees shall be planted at a rate of one t0 two-inch and one half inch caliper h. 5 canopy large tree per 2,000 250 square feet of vehicular use parking 6 required landscaped area. Each large tree shall be located within a 7 minimum growing area of 250 square feet, not encroached upon by shrubs 8 (within three feet) or impervious pavement, with a minimum dimension of 9 10 feet. 10 Alternate planting designs may be approved by the Planning Director, or designee, provided the design demonstrates that at least 35% of the 11 vehicular use area shall be shaded during the summer months within 15 12 13 years of planting. 14 3. **Shrubs** 15 Shrubs shall be credited at the rate of One 15- to 18-inch minimum height 16 evergreen or deciduous shrub shall be required per 250 35 square feet of 17 required landscaped total vehicular use area. 18 This rate may be varied by the Planning Director or designee based upon b. 19 considering alternate shrub heights, ground covers, or other factors in accordance with the Planning Department's landscape standards. size of 20 21 installed shrubs or groundcover. 22 C. Maintenance 23 1. All canopy trees located within vehicular use areas shall be limbed up to a 24 height of six feet to allow for clear views under them. 25 Shrubs within any vehicular use area shall be maintained to remain less than 36 inches in height. 26 27 Trees shall be credited at the following rates, either in combinations of small understory and 28 large canopy trees, or with large canopy trees only, to add up to the required landscape area: 29 Additional credit may be given for larger trees, up to 4-inch caliper, when larger growing areas 30 are also provided. One small tree/large shrub or evergreen tree at the rate of one 8-foot tall tree per 125 square feet 31 32 of required landscaped area. Small trees and evergreen trees shall be located within a minimum 33 growing area of 125 square feet, with a minimum dimension of 7½ feet, not encroached upon by shrubs or impervious pavement. Small trees/large shrubs may be used to fulfill up to one half of 34 35 the required trees. 36 trees planted to meet requirements for landscaping within parking lots that are also located 37 within 25 feet of the right-of-way line may be counted toward both requirements 38 No more than one tree may be provided per island, unless there is at least the minimum growing 39 area per tree required above. Large trees shall not normally be planted less than 18 feet apart, 40 and small trees /large shrubs shall not normally be planted less than 12 feet apart.

overhangs.

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Proposed locations of plants and parking spaces shall be arranged to protect plants from vehicle

Sec. 9.9 Fences and Walls

9.9.1 Height

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A. The maximum height of a fence or wall shall be as shown in the table below, unless a higher fence or wall is required by other provisions of this Ordinance. An exception shall be granted for lots of 2 acres or more where fences may exceed the 4 foot height limit up to 8 feet without Board of Adjustment approval if the fence is located at least 50 feet from the right of way and is made of a see through material.

| Height | Rural | Suburban | Urban | Compact | Downtown |
|-----------------------------|-------|----------|-------|---------|----------|
| Street Frontage* | | | | | |
| By Right | 8 | 4 | 4 | 4 | 4 |
| With Bd. of Adj. Use Permit | | 8 | 8 | 8 | 8 |
| No Street Eventage | 0 | 0 | 0 | 0 | 0 |

*Note: Fences and walls over 50 feet from the right-of-way are subject to the "No Street Frontage" standards

- B. <u>Fences or walls within required street yards shall comply with the street frontage height standard.</u>
 - C. Adjustments to the height limits may be permitted by staff the Planning Director, or designee, due to field conditions or in order to accommodate decorative features on the fence or wall. fences and walls required to be higher by other provisions of this ordinance shall be allowed.

Fences or walls existing at the time of adoption of this amendment (7/20/98 City, 8/10/98 County) shall be considered nonconforming and must meet existing regulations if damaged more than 50% of replacement value and rebuilt.

- Higher fences or walls shown and approved on a development plan or site plan are also allowed
 - **D**. The Board of Adjustment may <u>issue a use permit to</u> allow fences or walls to exceed the height limits <u>above where all of</u> the following findings are made:
 - 1. That the fence or wall does not impede the natural light from reaching the subject or surrounding properties to their detriment;
 - **2.** That normal circulation of air is not unreasonably impeded by the fence or wall for the subject or surrounding properties;
 - **3.** That the fence or wall will not hinder access to the subject or surrounding properties for emergency services;
 - **4.** That the fence or wall shall be reasonably compatible with the surrounding properties in that it will not adversely affect property values; and
 - **5.** That vision clearances for pedestrian and vehicular traffic will not be impeded. Additional Conditions may be specified to protect the welfare of the neighborhood and adjacent properties.

33 9.9.2 Fences

A. A finished side of all fences shall face off site.

Sec. 9.9 Fences and Walls

- B. Except in the Rural Tier, all chain-link fences shall have green or black vinyl coating and shall be capped.
- 3 C. Razor wire, concertina wire, barbed wire, and similar fencing materials shall be prohibited in all residential districts except in the Rural Tier.

5 9.9.3 Walls

- A. Walls shall be constructed of one or a combination of the following materials: stucco over concrete block, exposed aggregate concrete, brick, stone, or architectural block in a structurally safe and attractive condition. Alternative walls may be permitted with the approval of the Planning Director, or designee, if such alternative walls provide a similar level of opacity to that of the listed materials and are in keeping with the architecture of the development. No walls of exposed, painted-only, plain concrete cinder block shall be permitted.
- B. No wall shall be located within any required drainage, utility or similar easement.
- 14 C. <u>Pedestrian connections through walls that connect to adjacent neighborhoods or other uses shall be encouraged.</u>

16 9.9.4 Retaining Walls

- 17 A. Retaining walls may be located within <u>required</u> yards. spaces.
- 18 B. Retaining walls built to support a grade eight feet or more higher than the grade at
 19 the interior edge of the buffer shall also be set back 10 feet from the interior edge of
 20 the buffer.

Sec. 9.10 Installation and Maintenance

2 Installation Standards

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3 9.10.1 Responsibility

Unless otherwise stated, the owner of any property where landscaping or buffering is required shall be responsible for the maintenance of all required plant material (including street trees located off-site), fences and walls. and continued compliance with this Section. Maintenance responsibilities shall include the clearing and replacement of required material that is dead and/or dying.

9 Trees and shrubs shall be kept trimmed back from doors, windows and walkways.

10 9.10.2 Pruning

A. General

Trees and shrubs shall be kept trimmed back from doors, windows, and walkways.

B. Standards

14 Necessary pruning and trimming shall be in accordance with the American National Standards for Tree Care Operations: Tree Shrub and Other Woody Plant 15 Maintenance – Standards Practices (Pruning), and shall not be interpreted to include 16 17 topping of trees through removal of crown material or the central leader, or any other similarly severe procedures such as lollipopping, meatballing, or hatracking that 18 cause irreparable harm to the natural form of the tree, except where such procedures 19 20 are necessary to maintain public overhead utilities. Any such activity shall be a violation of this Ordinance and additional plant material may be required by the 21 22 Planning Director or designee to replace or supplement the damaged plant material.

Sec. 9.11 Administration

9.11.1 **General Request for Extension of Compliance**

It is recognized that land development occurs continuously and that vegetation used in landscaping or screening should be planted at certain times to ensure the best chance of survival.

9.11.2 Extensions for All Other Development

- A. In order to ensure insure compliance and to reduce the potential expense of replacing landscaping or screening materials which were installed at an inappropriate time or under unfavorable conditions, a letter of request for extension of compliance with landscaping requirements may be filed with the Planning
 Director, or or Inspections, which states the reasons why the request is being made. If the <a href="Director of Inspections finds that there are unfavorable conditions for planting, an extension of compliance with landscaping requirements may be allowed. In addition, This letter shall acknowledge that the applicant for the Building Permit is aware of all landscaping and screening requirements, and will comply with those requirements within 90 days, or discontinue use of the property.
 - **B.** The Planning Director, or designee, shall grant the extension on requests for planting extensions for single-family development submitted between May 15 and September 15 of each year and may grant the extensions for other uses and at other times if there are unfavorable conditions for planting.
 - C. If the initial letter of request for extension of compliance with landscaping requirements has expired and conditions are still deemed unsuitable for planting, the an applicant may request one additional extension of up to 90 days. During periods of extreme drought, as evidenced by the official declaration of Stage 3 or greater mandatory water conservation requirements, the Planning Director, or designee, may authorize additional 90-day extensions beyond the one extension typically allowed. These extensions may be continued throughout the period in which the extreme drought conditions remain. Failure to comply with the provisions of this Section within the time noted in the letter of request for the extension of compliance with landscaping requirements shall be deemed a violation of this ordinance.
 - D. The applicant shall also acknowledge that while a Conditional Certificate of Compliance may be issued, no Final Certificate of Compliance will shall be issued while there is an active (pending) letter of request for extension of compliance with landscaping requirements unless a performance guarantee (such as a letter of credit or performance bond) sufficient to cover 120150% of the installed landscaping costs has been posted with the Inspections or Planning Department.

9.11.3 Variations

- **A.** The approving authority may modify buffer and landscape standards where:
 - **1.** There are special considerations of site design and/or topography.
- There is existing healthy vegetation that is sufficient to meet the requirements of this Section in part or in whole.
- 42 There exists a unique relationship to other properties.

| 1 2 3 | ; | | The plantings or planting area would conflict with utilities, easements, or overhead power lines, or encroach upon City trees, as recommended by the Urban Forester. | | |
|---------------|--|-------------------|--|--|--|
| 4 5 | : | | Proposed street widening not provided by the developer will consume the landscaping area. | | |
| 6 7 8 | | se, th | ereening or landscaping requirements of any other section warrant a variance, the approving authority may vary the requirements of this Section so long as the lons is met. | | |
| 9 10 11 | 1 | modi | approving authority may require alternative buffers or landscaping when a fication to the requirements of this section is warranted in order to meet the t of the specified standards. | | |
| 12 | Extensions | for S | ingle-Family Residential Development | | |
| 13 | | | vho wishes to delay planting of required street trees at a new single-family house | | |
| 14 | | | Certificate of Compliance on such house may file an extension request with the | | |
| 15 | designated | Plani | ning Department. staff. Except when sustained unfavorable planting conditions | | |
| 16 | have existed in other months, such requests shall generally be received only during the period | | | | |
| 17 | from May 1 | 5th to | September 15th of each year. Separate extension requests must shall be filed | | |
| 18 | for each lot | and s | shall include: a) specific details identifying the property involved; b) the | | |
| 19 | location, nu | umbe | r, size, species and estimated installed cost of the street trees to be planted; c) a | | |
| 20 | specific exte | ensio | n deadline date by which the trees shall be planted; d) an administrative fee | | |
| 21 | handled by | the P | Planning Department for each lot for which an extension is granted; e) a | | |
| 22 | | | lavit (as appropriate) and f) posting of a performance guarantee. If all | | |
| 23 | | | extension request are properly met, and if the homebuilder does not have | | |
| 24 | | | ations or compliance issues with the City, then the planting extension will shall | | |

The Planning Department shall adopt and maintain appropriate administrative guidelines to

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be granted.

administer this program.